

REMARKS

In the Office Action dated February 25, 2003, claims 1-17 are pending. Note that claims 1 and 7 are independent claims from which claims 2-6 and 8-17 depend, respectively, therefrom.

Claim 1 stands rejected under 35 U.S.C. 102(b) as being anticipated by Cho (USPN 5,959,552).

Claim 1 is directed towards a pre-crash sensing system coupled to a countermeasure system having at least a first countermeasure and a second countermeasure. The pre-crash sensing system includes a vision system that generates an object size signal and an object distance signal. A controller is coupled to the vision system and deploys either the first countermeasure or the first and second countermeasure in response to the object distance signal and the object size signal.

The present invention performs countermeasures in response to size of an object. By knowing size of a detected object, different countermeasures and different counter measure activation modes may be chosen. Performing a countermeasure in response to size also minimizes unintentional and inadvertent activation of countermeasure devices.

Cho is directed towards a system for minimizing automobile collision damage and personal injury. Cho teaches a radar system that is used to determine speed, direction, and distance data of an obstacle. Cho alters speed of a host vehicle and actuates air bags in response to speed of the obstacle.

Cho does not teach or suggest a vision system, having one or more cameras, that is used to detect object size, as does the present invention. Cho teaches use of radar, which is not the same as the vision system of the present invention. Also, the Office Action refers to col. 11, lines 44-47, for teaching generation of an object size signal. This section of Cho simply states that the radar of Cho is capable of detecting a small object, not the size of the object. Nowhere in Cho is object size detected, determined, or used to perform any

countermeasures. Thus, Cho does not teach or suggest each and every element of claim 1.

Claims 1 and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shirai (USPN 6,018,308) in view of Miller et al. (USPN 6,442,484).

Shirai is directed towards an obstacle recognition system for an automotive vehicle. Shirai teaches a radar unit for determining height and distance of an object. Shirai does not teach or suggest use of a vision system, and as stated by the Office Action fails to teach or suggest a controller coupled to a vision system and deploying either a first countermeasure or a first countermeasure and a second countermeasure in response to an object distance signal and an object size signal.

Miller is directed towards a method for pre-crash assessment using spheroidal partitioning. Miller teaches use of a radar sensor to determine distance of an object. Miller activates a countermeasure in response to distance of the object. Miller as with Shirai, also does not teach or suggest use of a vision system and deployment of a countermeasure in response to an object distance signal and an object size signal. Nowhere in Miller is object size detected, determined, or used to perform any countermeasures. Thus, the Applicants submit that it would not have been obvious to one of ordinary skill in the art to arrive at the present invention as recited in claim 1, since Shirai and Miller alone or in combination do not teach use of a vision system and deployment of a countermeasure in response to an object distance signal and an object size signal.

Claim 7 is directed towards a method of operating a pre-crash sensing system for an automotive vehicle having a countermeasure system. A decision zone relative to the vehicle is established. An object within the decision zone is detected using a vision system. An object distance and relative velocity using the vision system is determined. Object size is

determined. The countermeasure system is activated in response to the object size and relative velocity.

As stated above, Shirai and Miller do not teach use of a vision system and activation of a counter measure in response to object size and relative velocity. Shirai teaches determination of height, distance, and relative speed of an object and Miller simply teaches activation of a countermeasure in response to distance of an object. Thus, as with claim 1, the present invention as recited in claim 7 is not taught or suggested by Shirai and Miller alone or in combination.

Additionally, to establish a *prima facie* case of obviousness, three basic criteria must be met, under MPEP 2142. First there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the second reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art references when combined must teach or suggest all the claim limitations.

There is no suggestion in either Shirai or Miller to combine the teachings of each reference, let alone whether the combination thereof would render the present invention obvious. For example, neither Shirai nor Miller, as stated above, teach use of a vision system. Thus, Shirai and Miller when combined do not teach or suggest all the claimed limitations of claims 1 and 7. Also, the Examiner has not provided any objective reason to combine the stated references.

Cho, Shirai, and Miller do not teach or suggest alone or in combination use of a vision system and deployment of a countermeasure in response to an object distance signal and an object size signal. Also, Cho, Shirai, and Miller do not teach or suggest alone or in combination use of a vision system and activation of a countermeasure in response to object size and relative velocity. Therefore, claims 1 and 7 are novel and nonobvious and are in a condition for

allowance. Also, since claims 2-6 and 8-17 depend from claims 1 and 7, respectively, they are also novel and nonobvious for at least the same reasons.

In light of the amendments and remarks, Applicants submit that all objections and rejections are now overcome. The Applicants have added no new matter to the application by these amendments. The application is now in condition for allowance and expeditious notice thereof is earnestly solicited. Should the Examiner have any questions or comments, he is respectfully requested to call the undersigned attorney.

Respectfully submitted,

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